CLAIMS

1. A system for conversion of wave energy in a body of water having a floor, including:

(a) a stationary support element rigidly mounted to the floor of the body of water;

(b) buoyancy apparatus including a buoy portion having formed therewith wave energy collection apparatus in the form of a cavity integrally formed therewith, the cavity having an opening facing the direction of advancement of oncoming waves;

(c) coupling apparatus for hingedly connecting said buoyancy apparatus to said stationary support element so as to be pivotal in a generally vertical plane with respect to said stationary support element;

(d) at least one piston apparatus for compressing and drawing hydraulic fluid when said piston apparatus is contracted or extended, correspondingly, said piston apparatus being hinged at one end to a stationary support, and hinged at its other end in association with a predetermined element operative to move in response to movement of said buoyancy apparatus;

(e) a hydraulic motor having an energy output; and

(f) a piping system coupling said hydraulic fluid in said piston apparatus to said hydraulic motor.

2. The system as claimed in claim 1, wherein said coupling apparatus include at least two parallel support arms, each of which is hinged to said stationary support element and to said buoyancy apparatus, wherein each support arm is pivotal with respect to said stationary support element and said buoyancy apparatus in a generally vertical plane, wherein corresponding portions of each support arm between its hinges are of equal length , and wherein said buoyancy apparatus is free to move along at least a portion of a circular path described with respect to said stationary support element, in a generally vertical plane, while said buoy portion is retained above said collection apparatus.

3. The system as claimed in claim 1, wherein said opening is sloped so that its upper edge is closer to oncoming waves than its lower edge.

4. The system as claimed in claim 1, wherein said buoyancy apparatus is formed so as to define a wave diversion surface extending above said opening toward oncoming waves.

5. A system for conversion of wave energy in a body of water having a floor, including:

(a) a stationary support element rigidly mounted to the floor of the body of water;

(b) buoyancy apparatus including a buoy portion having formed therewith wave energy collection apparatus in the form of a cavity integrally formed therewith, the cavity having an opening facing the direction of advancement of oncoming waves;

(c) coupling apparatus for hingedly connecting said buoyancy apparatus to said stationary support element wherein said buoyancy apparatus is pivotal in a vertical plane with respect to a predetermined axis in said stationary support element, said coupling apparatus include at least two parallel support arms, each of which is hinged to said stationary element and to said buoyancy apparatus, wherein each support arm is pivotal in a vertical plane about said stationary support element and said buoyancy apparatus, wherein corresponding portions of each support arm between its hinges are of equal length , and wherein said buoyancy apparatus is free to move along at least a portion of a circular path described with respect to said stationary support element, , in a generally vertical plane, while said buoy portion is retained above said collection apparatus,

and wherein at least one of said support arms includes a counterbalancing weight extending from said central axis toward the side opposed to said buoyancy apparatus;

(d) at least one piston apparatus for compressing and drawing hydraulic fluid when said piston apparatus is contracted or extended, correspondingly, said piston apparatus being hinged at one end to a stationary support, and hinged at its other end in association with a predetermined element operative to move in response to movement of said buoyancy apparatus;

(e) a hydraulic motor having an energy output; and

(f) a piping system coupling said hydraulic fluid in said piston apparatus to said hydraulic motor.

6. The system as claimed in claim 1, wherein said piping system includes a pressure tank, and said piping system couples said hydraulic fluid in said piston apparatus to said pressure tank, and further couples said pressure tank to said hydraulic motor.

7. The system as claimed in claim 1, wherein said piping system includes a first conduit for leading hydraulic fluid into said pressure tank when said piston apparatus is contracted, and a second conduit for leading hydraulic fluid into said pressure tank when said piston apparatus is extended.

8. The system as claimed in claim 1, wherein said piping system further includes a hydraulic fluid reserve tank for supplying hydraulic fluid to said piston apparatus, and for collecting hydraulic fluid from said hydraulic motor.

9. The system as claimed in claim 6, wherein said piping system further includes a hydraulic fluid reserve tank for supplying hydraulic fluid to said piston apparatus, and for collecting hydraulic fluid from said hydraulic motor and excess hydraulic fluid from said pressure tank.

10. The system as claimed in claim 6, wherein said piping system further includes a plurality of one-way valves.

11. The system as claimed in claim 6, wherein at least one of said pressure tank and said hydraulic motor are fitted with pressure relief valves for draining excess fluid therefrom.

12. The system as claimed in claim 6, wherein said pressure tank contains a gas maintained at a high pressure for regulating the pressure applied from said pressure tank to said hydraulic motor.